

TSNA

Objectives

1. To design a first generation laboratory model of a product by 1991 with MS TSNA (TSNA/mg TPM) delivery reduced 90% relative to the TPM-corrected TSNA delivery of a 1987 full-flavored, blended cigarette.
2. To design a second generation laboratory model of a product by 1993 with MS TSNA delivery (TSNA/mg TPM) delivery reduced 95% relative to the TPM-corrected TSNA delivery of a 1987 full-flavored, blended cigarette, utilizing technology based on a fundamental understanding of NA formation.

Strategies

Reduction of MS TSNA By Reducing Preformed TSNA & Pyrosynthetic TSNA Precursors in Filler

1. Reduce MS TSNA by selective removal of TSNA, amine precursors, and/or nitrosating agent precursors from filler.
2. Reduce MS TSNA by biochemical alteration(s) to tobacco leading to removal of alkaloid precursors of TSNA.

Reduction of MS TSNA By Inhibiting the Pyrosynthesis of TSNA

3. Reduce the levels of pyrosynthesized MS TSNA by incorporation into the cigarette design those aspects of oriental filler which result in an absence of significant TSNA pyrosynthesis from oriental tobacco.
4. Reduce the levels of pyrosynthesized MS TSNA by decreasing the reactivity to nitrosation of the amine precursors, or blocking reaction pathways which form nitrosating agents or which yield TSNA from the nitrosating agents.

Reduction of MS TSNA By Enhancing Decomposition of TSNA

5. Evaluate the enhancement of TSNA decomposition during smoking as a method for reducing TSNA delivery.

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Reduction of MS TSNA By Altering Physical/Chemical Parameters of Cigarettes

6. Reduce the levels of pyrosynthesized MS TSNA by alterations in cigarette construction parameters.
7. Reduce the levels of pyrosynthesized MS TSNA by manipulation of filler salt content.
8. Reduce the levels of pyrosynthesized MS TSNA by manipulation of casings typically used in cigarettes but missing from the reference cigarette.

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